II. REMARKS

Applicants gratefully acknowledge the Examiner's determination that claims 2-13 contain allowable subject matter (Office Action, dated October 10, 2007, at 7, lines 17-20), and the Examiner's determination that independent claims 1, 14 and 15 contain allowable subject matter as stated by the Examiner during an Examiner's Interview conducted between Examiner Cuong V. Luu and Applicants' attorney, Joerg-Uwe Szipl, on March 20th and 26th, 2008.

By the present amendment, claims 1, 4, 7, 9, 11, 14 and 15 have been amended. Specifically, independent claims 1, 14 and 15 have been amended to recite "wherein $\vec{u}$ designates velocity of flow of viscous fluid, V designates differential volume of the viscous fluid, $p\vec{I}$ designates pressure p of the viscous fluid along the $\vec{I}$ vector, and Re corresponds to a non-dimensional Reynolds number" as supported on page 27, lines 4-16, and on page 32, lines 8-15, of Applicant's specification as originally filed. Claims 1, 14 and 15 have also been amended to replace the word "convention" with the word --convection--. Claims 1 and 15 have been additionally amended to recite the step of "outputting to an output device a result of the method for numerical analysis of the flow field of incompressible viscous fluid, wherein the output device prints, or displays, or prints and displays, the result" as supported on page 22, lines 20-22, and by Figures 2 and 3, of Applicants' disclosure as originally filed.

Claim 4 has been amended to recite "Δx is grid width in the x direction and Δy is grid width in the y direction, and vectors $\vec{i}$ and $\vec{j}$ correspond to the x and y directions, $\vec{n}$ corresponds to a unit vector normal to the differential surface S, and wherein $A_{i,j}$, $A_{i,j-1}$, $B_{i,j}$, and $B_{i-1,j}$ are fractions of area of grid, and wherein u designates velocity of flow in the x direction and v designates velocity of flow in the y direction" as supported on page 33, line 1, to page 34, line 7, of Applicants' specification as originally filed. Claim 7 has been amended

to additionally recite "wherein F_x designates drag force in the x direction and F_y designates lift force in the y direction, and σ designates a stress tensor at the surface of the object" as supported on page 36, lines 18-22, of Applicants' specification as originally filed. Claim 9 has been amended to additionally recite "wherein A designates amplitude of y-direction displacement y, f_c designates frequency of forced vibration, and t designates time" as supported on page 47, lines 13-20, of Applicants' specification as originally filed.

Claim 11 has been amended to additionally recite

"wherein m designates mass of the circular cylinder, c designates a viscous damping coefficient, k designates an elastic recovery coefficient of the spring model, ρ designates fluid density, U_0 designates velocity of the uniform flow, D designates a diameter of the circular cylinder, and C_L designates a lift force coefficient,
wherein f_0 designates a characteristic frequency, h designates a non-dimensional damping coefficient, Sc designates a Scruton number, and $y = A\sin(2\,\pi\,f_C t)$,
wherein A designates amplitude of y-direction displacement y, f_c designates frequency of forced vibration, and t designates time"

as supported on page 47, lines 13-20, and on page 48, lines 3-13, of Applicants' specification as originally filed.

The present amendment adds no new matter to the above captioned application.

i. <u>Specific Comments Regarding Equations in the Claims</u>

Applicants have defined all of the parameters recited in the claims. With respect to notation regarding mathematical functions, Applicants contend that such notation is clear on its face as it is a form of language known in the art. By analogy, just as an applicant does not have to define the alphabet to include words in the claims, an applicant does not need to define mathematical notation pertaining to conventional notation regarding mathematical functions in the claims.

For example, the notation "$\partial \vec{u} / \partial t$" in the first term of Equation (7), as recited in claims 1, 14 and 15, is well-known mathematical shorthand for "the partial differential of $\vec{u}$ with respect to time" as would be immediately understood by a person of ordinary skill in the art. "t" in Equation (7) is, therefore, not a parameter but is part of the mathematical notation used in expressing the mathematical function "$\partial / \partial t$" expressing the mathematical operation of "the partial derivative with respect to time." Applicants contend that it is unnecessary (and unduly burdensome) to define well-known mathematical notation pertaining to mathematical functions in the claims. This would defeat the purpose of having mathematical notation in the first place.

Likewise, the notation "$V_{i,j}$" used in claims 1, 14 and 15 pertains to the limit of integration, and not to a parameter, as would be instantly understood by a person of ordinary skill in the art. In particular, "$V_{i,j}$" pertains to the portion of the volume integrated over, wherein "i" and "j" pertain to two dimensions.

With respect to claim 4, the term "m" used in the summation notation of Equation (8) does not pertain to a parameter. Instead, "m" corresponds to the range over which the summation is performed as would be instantly understood by a person of ordinary skill in the art. The range of "m" is clearly defined by the summation notation. With respect to "S" as used in claim 4, it pertains to the differential surface and is not a parameter.

Wit respect to the notation "ds" used in claim 7 and "dS" used in claim 4, Applicants point out that these notations pertain to integration over a surface and, therefore, are not parameters. Furthermore, the use of "ds" and "dS" is trivial such as is the use of "the" and "said" in the claims. Because claims 4 and 7 are not dependent on one another, Applicants contend that there is no confusion created by the difference in notation as would be instantly understood by a person of ordinary skill in the art.
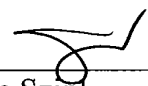
III.   <u>CONCLUSION</u>

Independent claims 1, 14 and 15 contain allowable subject matter as conceded by the Examiner. In view of the present amendment, claims 1 and 4-15 are now in compliance with 35 U.S.C. §§ 101 and 112.

For all of the above reasons, claims 1 and 4-15 are in condition for allowance and a prompt notice of allowance is earnestly solicited.

The below-signed attorney for Applicants welcomes any questions.

Respectfully submitted,

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